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Competitive balance *versus* competitive intensity before a match:

Is one of these two concepts more relevant in explaining attendance?

The case of the French football Ligue 1 over the period 2008-2011

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Structure

1. Competitive balance and intensity
2. Structure of Ligue 1
3. Model specification
4. Results
5. Implications and discussion

Introduction

Structure of the presentation

1. Concepts of competitive balance and competitive intensity
2. Organizational and financial structure of Ligue 1
3. Model specification
4. Results (1135 observations)
5. Implications and discussion

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Competitive balance and intensity

Competitive balance

- A concept currently well documented
- It postulates the necessity of **equilibrium between teams** to guarantee uncertainty of outcome and thus generate public demand
- According to Fort and Macxy (2003), 2 lines of literature:

1. The consequences of the introduction or disappearance of redistribution mechanisms
= analysis of competitive balance (ACB)

2. The impact on fans
= uncertainty of outcome hypothesis (UOH)

Structure

References

Rottenberg (1956)
Neale (1964)
Cairns, Jennett & Sloane (1986)
Hoehn & Szymanski (1999)
Barget & Rouger (2000)
Kesenne (2000)
Rouger (2000)
Eckard (2001, 2003)
Schmidt & Berri (2001, 2003)
Szymanski (2001, 2003)
Humphreys (2002)
Zimbalist (2002)
Buzzacchi, Szymanski & Valletti (2003)
Fort & Maxcy (2003)
Sanderson & Siegfried (2003)
Michie & Oughton (2004)
Cain & Haddock (2006)
Groot (2008)
Lee (2010)
Pawlowski, Breuer & Hovemann (2010)
Drut (2011)

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Competitive balance and intensity

Competitive intensity

- In the European leagues, there is a promotions/ relegations system (opened leagues)
⇒ sporting stakes at the bottom of the league standing
⇒ an unbalanced championship can be potentially more interesting than a more balanced one
⇒ **competitive intensity**

- Apart from the degree of equality between teams, audiences are also interested in the prizes distributed
⇒ competitive intensity relates to different stakes
= qualification in European competitions
relegation in inferior divisions in European leagues
playoff selections in both American and European leagues
⇒ competitive intensity depends on **uncertainty of outcome in relation to sporting stakes**

Structure

References

Kringstad & Gerrard (2004, 2005, 2007)
Cavagnac & Gouguet (2006)

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Structure of Ligue 1

Organizational structure

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	Ranks	Consequence (situation)	Qualification in terms of sporting strategic ranks
States in the standings	1	Champion	Distinctive Strategic Rank (DSR)
	2	Champions League (CL)	DSR
	3	Preliminary round of the CL	DSR
	4	Preliminary round of the Europa League (EL), no preliminary round if winner of French Cup	DSR
	5	Preliminary round of the Europa League (EL) if 1, 2, 3 or 4 wins French Cup OR League Cup	Potential DSR
	6	Preliminary round of the Europa League (EL) if 1, 2, 3, 4 or 5 wins French Cup AND League Cup	Potential DSR
	from 5, 6 or 7 to 17	Stay in Ligue 1	-
	18, 19 and 20	Relegation	Group of non distinctive strategic ranks

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Structure of Ligue 1

Financial structure

Structure

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	2008-2009		2009-2010		2010-2011	
Turnover without players transfer fees	1 047 833		1 071 603		1 040 480	
TV rights	575 673	55%	606 724	57%	607 485	58%
Sponsoring and advertising	188 266	18%	177 583	17%	178 716	17%
Gate income	150 377	14%	138 157	13%	131 487	13%
Other income (essentially merchandising)	133 517	13%	149 139	14%	122 792	12%
Salaries expenses	721 581	69%	777 842	73%	776 706	75%

Sources: LFP-DNCG reports

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Model specification

Model and variables

Structure

- We specify and estimate a fairly standard demand equation that makes distinctions among the explanatory factors that have an effect on attendance, the following groups of variables:
  socioeconomic variables
  variables proxying the expected quality of the match
  those capturing incentives for attending a match
  the "season effect" (since there are three seasons, 2008-2009 is the reference) (*SE*)
  variables measuring competitive balance and intensity

- The endogenous variable is the log-attendance for a match

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Model specification

Socioeconomic variables

Structure

References

Durand, Ravenel & Helleu (2005)
Bird (1982)
Fluckiger & Manzini (1991)
Baimbridge, Cameron & Dawson (1996)
Peel & Thomas (1992)
Falter & Pérignon (2000)
Falter, Pérignon & Vercruysse (2008)
Fort (2004)
Krautmann & Berri (2007)

4 indicators for the home team:
- the log-urban area population (*POP*)
- the departmental percentage of young people (less than 25 years old) (*YOU*)
- the log-arrondissement per capita income by hour (*INC*)
- the departmental unemployment rate for the current month (*UNE*)

We expect to see the positive effects of *POP*, *YOU* and *UNE*, and a negative effect of *INC* (inferior good)

We do not take into account admission prices because it appears to be an endogenous variable (possibility of modifying prices according to the expected attendance) Besides, attendance is often tested as inelastic at prices because teams price their tickets in the inelastic range of demand

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Model specification

Variables proxying the expected quality of the match

2 indicators for ex ante quality:
- the log-budget for the home team (*BUH*)
- the log-budget for the away team (*BUA*)

3 indicators for current quality:
- the standing for the home team (*STH*)
- the standing for the away team (*STA*)
- the average number of goals scored at home by the home team before the match (*GHH*)

We expect all variables of increasing quality to have a positive effect on attendance (negative sign for standings because the best rank is 1 and the worst is 20)

Structure

Reference

Garcìa & Rodriguez (2002)

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Model specification

Variables capturing incentives for attending a match

8 indicators = the game week (*GW*), its square (GW^2) and 7 dummies:
- television dummies (time slots, reference = matches at 9 pm on Sunday) (*TV*)
- a geographical derby dummy (*DER*)
- hooliganism dummy (PSG during the 2010-2011 season) (*HOO*)
- a substitute dummy (rugby in Montpellier, Paris and Toulouse) (*RUG*)
- a “waiting for a new stadium” dummy (Bordeaux, Le Havre, Le Mans, Lille, Lyon, Nice and Valenciennes) (*WNS*)
- a “promotion effect” dummy for the home team (*PEH*)
- a “promotion effect” dummy for the away team (*PEA*)

We expect to have a positive effect of *DER* and *PEH* and a negative effect of *TV*, *HOO*, *RUG* and *WNS*

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Model specification

Variables measuring competitive balance and intensity

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- Competitive balance = points difference between the two teams before the match (*CB*)
- Competitive intensity = points difference for the home team with the closer competitor with a different situation (uncertainty of outcome in relation to sporting stakes) (*CI*)

We expect a negative effect of the two measures (the higher the difference, the smaller the uncertainty of outcome)

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Model specification

Econometric specification

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We selected a log-linear specification for the demand in football that we write as follows:

$$ATT_{ijt} = \beta_0 + \beta_X X_i + \beta_Z Z_{ij} + \beta_W W_{it} + \beta_K K_{jt} + \beta_L L_{ijt} + \varepsilon_{ijt}$$

with:

- X_i = *(POP, INC, YOU, RUG, WNS)*
- Z_{ij} = *DER*
- W_{it} = *(BUH, HOO, PEH)*
- K_{jt} = *(BUA, PEA)*
- L_{ijt} = *(UNE, STH, STA, GHH, GW, GW², TV, SE, CB, CI)*

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Results

3 questions

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- Are competitive balance AND intensity both significant in explaining attendance?
- For competitive intensity, should only definite or definite AND potential ranks be taken into account?
- Does a more relevant temporal horizon exist to consider whether there is uncertainty of outcome in relation to sporting stakes?
  Should the reversal take place at the end of the next match or on a longer temporal horizon so that spectators believe there may be uncertainty of outcome?

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Results

2 first questions

Structure

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	Model 1 (only definite ranks)		Model 2 (definite AND potential ranks)	
	Coefficient	p-value	Coefficient	p-value
POP	0.2233	<.0001	0.2235	<.0001
INC	-2.0616	0.0026	-2.0571	0.0026
UNE	3.0988	<.0001	3.1996	<.0001
YOU	0.8483	<.0001	0.8489	<.0001
BUH	0.7334	<.0001	0.7342	<.0001
BUA	0.1649	<.0001	0.1650	<.0001
STH	-0.0059	<.0001	-0.0057	<.0001
STA	-0.0023	0.0427	-0.0023	0.0394
GHH	-0.0043	0.7341	-0.0054	0.6693
GW	-0.0101	<.0001	-0.0107	<.0001
GW²	0.0003	<.0001	0.0003	<.0001
WEE	-0.0330	0.2040	-0.0329	0.2061
SA7	0.0014	0.9507	0.0012	0.9609
SA9	0.0041	0.8822	0.0039	0.8877
SU8	-0.0299	0.2244	-0.0305	0.2169
SU9	ref.		ref.	
DER	0.1198	<.0001	0.1198	<.0001
RUG	-0.0176	0.5597	-0.0210	0.4879
HOO	-0.2060	<.0001	-0.2012	<.0001
WNS	-0.4421	<.0001	-0.4421	<.0001
PEH	0.2267	<.0001	0.2277	<.0001
PEA	0.0481	0.0062	0.0484	0.0059
2008-2009	ref.		ref.	
2009-2010	-0.1714	<.0001	-0.1715	<.0001
2010-2011	-0.2281	<.0001	-0.2309	<.0001
CB	**-0.0006**	**0.4831**	**-0.0004**	**0.5817**
CI	**-0.0078**	**<.0001**	**-0.0081**	**<.0001**
Constant	8.5855	<.0001	8.5641	<.0001
Observations	1135		1135	
Adjusted R²	0.8658		0.8658	

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Results

3rd question with only definite ranks

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	Model 3		Model 4		Model 5	
	Coefficient	**p-value**	**Coefficient**	**p-value**	**Coefficient**	**p-value**
POP	0.2185	<0001	0.2184	<.0001	0.2207	<.0001
INC	-2.0937	0.0030	-2.0897	<.0001	-2.0766	<.0001
UNE	3.1220	<0001	3.2343	<.0001	3.2521	<.0001
YOU	0.8451	<0001	0.8260	0.0036	0.8244	0.0036
BUH	0.7472	<0001	0.7497	<.0001	0.7462	<.0001
BUA	0.1662	<0001	0.1661	<.0001	0.1664	<.0001
STH	-0.0069	<0001	-0.0069	<.0001	-0.0065	<.0001
STA	-0.0023	0.0402	-0.0022	0.0491	-0.0023	0.0435
GHH	-0.0051	0.6858	-0.0056	0.6611	-0.0045	0.7237
GW	-0.0107	<0001	-0.0115	<.0001	-0.0121	<.0001
GW²	0.0003	<0001	0.0003	<.0001	0.0004	<.0001
WEE	-0.0309	0.2415	-0.0326	0.2153	-0.0329	0.2111
SA7	0.0019	0.9363	0.0023	0.9229	0.0025	0.9172
SA9	0.0048	0.8653	0.0063	0.8220	0.0060	0.8300
SU5	-0.0259	0.3030	-0.0260	0.3033	-0.0268	0.2846
SU9	ref.		ref.		ref.	
DER	0.1217	<0001	0.1208	<.0001	0.1200	<.0001
RUG	-0.0081		-0.0102	0.7388	-0.0116	0.7017
HOO	-0.1961	<0001	-0.1941	<.0001	-0.1998	<.0001
WNS	-0.4374	<0001	-0.4379	<.0001	-0.4384	<.0001
PEH	0.2268	<0001	0.2304	<.0001	0.2316	<.0001
PEA	0.0481	0.0066	0.0490	0.0057	0.0499	0.0045
2008-2009	ref.		ref.		ref.	
2009-2010	-0.1835	<0001	-0.1841	<.0001	-0.1775	<.0001
2010-2011	-0.2309	<0001	-0.2330	<.0001	-0.2308	<.0001
CB	-0.0009	0.3076	-0.0009	0.2901	-0.0007	0.3827
CI	**0.0253**	**0.0688**	**0.0256**	**0.1475**	**0.0637**	**0.0079**
Constant	8.6567	<0001	8.6401	<.0001	8.5440	<.0001
Observations	1135		1135		1135	
Adjusted R²	0.8642		0.8641		0.8647	

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3rd question with definite AND potential ranks

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	Model 6		Model 7		Model 8	
	Coefficient	**p-value**	**Coefficient**	**p-value**	**Coefficient**	**p-value**
POP	0.2190	<.0001	0.2188	<.0001	0.2210	<.0001
INC	-2.0879	<.0001	-2.0776	<.0001	-2.0743	<.0001
UNE	3.1265	<.0001	3.2544	<.0001	3.2839	<.0001
YOU	0.8562	0.0026	0.8389	0.0032	0.8307	0.0034
BUH	0.7454	<.0001	0.7475	<.0001	0.7459	<.0001
BUA	0.1667	<.0001	0.1660	<.0001	0.1657	<.0001
STH	-0.0067	<.0001	-0.0068	<.0001	-0.0064	<.0001
STA	-0.0024	0.0350	-0.0022	0.0500	-0.0023	0.0404
GHH	-0.0058	0.6464	-0.0068	0.5939	-0.0049	0.7005
GW	-0.0107	<.0001	-0.0116	<.0001	-0.0123	<.0001
GW²	0.0003	<.0001	0.0003	<.0001	0.0004	<.0001
WEE	-0.0308	0.2440	-0.0339	0.1996	-0.0330	0.2093
SA7	0.0024	0.9196	0.0013	0.9568	0.0015	0.9492
SA9	0.0055	0.8457	0.0038	0.8938	0.0058	0.8351
SU5	-0.0265	0.2918	-0.0274	0.2774	-0.0275	0.2728
SU9	ref.		ref.		ref.	
DER	0.1222	<.0001	0.1205	<.0001	0.1204	<.0001
RUG	-0.0122	0.6897	-0.0123	0.6862	-0.0116	0.7009
HOO	-0.1919	<.0001	-0.1938	<.0001	-0.1998	<.0001
WNS	-0.4379	<.0001	-0.4379	<.0001	-0.4383	<.0001
PEH	0.2269	<.0001	0.2313	<.0001	0.2322	<.0001
PEA	0.0489	0.0056	0.0492	0.0054	0.0498	0.0046
2008-2009	ref.		ref.		ref.	
2009-2010	-0.1819	<.0001	-0.1811	<.0001	-0.1773	<.0001
2010-2011	-0.2327	<.0001	-0.2338	<.0001	-0.2315	<.0001
CB	-0.0008	0.3423	-0.0008	0.3341	-0.0007	0.4077
CI	**0.0346**	**0.0186**	**0.0412**	**0.0299**	**0.0688**	**0.0057**
Constant	8.6272	<.0001	8.5931	<.0001	8.5313	<.0001
Observations	1135		1135		1135	
Adjusted R²	0.8644		0.8644		0.8648	

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Implications and discussion

Implications about competitive balance and intensity

- Importance of sporting stakes
- Competitive balance between the two teams is not important before the match (what does not mean that competitive balance in general is not important)
- Does uncertainty of outcome in relation to sporting stakes need competitive balance or a minimum competitive balance level?
- In the European context, it seems necessary that there are both few clubs with the ability to be champions, and others which are weaker and of similar levels some the others or shared between 2 groups:
  1 where teams can hope for a qualification in the European cups and 1 where teams battle to avoid relegation

Structure

References

Andreff (2009, 2010, 2011, 2012)

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Implications and discussion

Implications about potential ranks

- The 5th and 6th ranks situation in Ligue 1 asks an important question: are these ranks a factor of appeal for spectators?
- According to the answer, 2 different solutions could be put forward: no change or an attempt to change these ranks to definitely qualify
- In the 2nd case, it would be necessary to delete the qualifications *via* the national cups, which is not possible since these cups would lose their appeal
- Our results indicate that the significance for uncertainty measured through a horizon of 1 or 2 matches is better with definite AND potential ranks than with definite ranks only

⇒ spectators interested in definite AND potential ranks

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Implications and discussion

Implications about temporal horizon of matches

- A horizon of 3 matches is better than 1 or 2
- 3 matches are a good horizon to consider, where the uncertainty of outcome is interesting because it allows the measurement of uncertainty during a championship on the basis of the team's percentage for which a situation change can arise during the 3 next game weeks
- Scelles proposes such a measure but with a horizon of 2 matches in his doctoral research and an article
- It would be relevant to observe if we obtain the same results that in the present article in an estimation of the television audience instead of stadium attendance

Structure

References

Scelles (2009, 2010)
Scelles, Desbordes & Durand (2011)

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Implications and discussion

Could our research contribute to the American context?

- In the American leagues, sporting stakes in the 1st part of the standing are guaranteed by playoffs but the absence of relegations implies no sporting stakes at the bottom of the table
- How to remedy this problem?
- A potential avenue involves reorganizing the draft: the 1st choice would be attributed to the highest ranked team among those which do not qualify in playoffs, the 2nd choice to the 2nd highest ranked team, etc. Such an allocation would give an incentive to be the highest ranked even if the qualification for the playoffs seems difficult to reach
- Would the American public agree with such an evolution which is based on the disappearance of the traditional lottery and against competitive balance?

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Implications and discussion

What would be the results in an estimation based on TV audience?

- A significant positive relationship between uncertainty and the size of TV audiences in English Premier League
- No significant impact of uncertainty on gate attendance or TV audience in the 2nd tier of English football
- TV viewers prefer close contests to more predictable contests in Spanish football
- TV viewers switch channels if they find the probability of a draw is increasing in English football
- These studies do not incorporate our uncertainty of outcome measure
- What temporal horizon of matches for which it is most relevant to consider whether there is uncertainty?

Structure

References

Forrest, Simmons & Buraimo (2005)
Buraimo (2008)
Buraimo & Simmons (2009)
Alavy, Gaskell, Leach & Szymanski (2010)

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Implications and discussion

What is the perception of spectators?

- Study before the Portugal Cup football final through a questionnaire with 156 participants:
  the more relevant items were *to taste victory*, *to support your team*, *good team performance*, *pre-match atmosphere*, *entertainment*, *your team's tradition*, *friends*, *being at a final* and *to enjoy sports*
- Survey of 367 individuals in a MLB market to discover the more relevant measures of competitive balance that explain their interest in both attending matches in a stadium and watching them on TV

⇒ Idea of survey in the French football context with the emphasis on examining the effects of both competitive balance and intensity

Structure

References

Correia & Esteves (2007)
O'Really, Kaplan, Rahinel & Nadeau (2008)

Conclusion

Principal points and perspectives

- Insignificant impact of points difference between the two teams concerned in a match (competitive balance)
- Significantly positive impact of uncertainty of outcome in relation to sporting stakes for the home team (competitive intensity)
- A study about TV audience ratings would be an interesting extension to the present article
- In spite of a new interest in Ligue 1 by Qatari TV channel Al Jazeera, it is uncertain whether TV channels will continue to finance Ligue 1 at the same levels
- Results about the determinants of TV audience ratings could help LFP and TV channels to optimize the format of the competition and its income

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FRANCE Comité National Olympique et Sportif Français

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Is one of these two concepts more relevant in explaining attendance?

The case of the French football Ligue 1 over the period 2008-2011

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